TABLE III

Attr	Y LD: 990554-0034 VED: 0528189 ED: 12:02	TEST METHOD DATE ASTM D-5191 05/26/99 ASTM D-5191 (CARB) ASTM D-5191 (ASTM) ASTM D-5191
LABORATORY TESTS RESULTS 05/28/99 ATTN: Atm	LABORATORY 1,D: DATE RECEIVED TIME RECEIVED REMARKS	#1 ASTM D-5191 ASTM D-5191 (LIMITS/D) LUTION (UNITS OF MEASURE TEST METHOD 5.82* 0.10 PSI ASTM D-5191 (C. 5.94 0.10 PSI ASTM D-5191 (E. 5.94 0.10 PSI ASTM D-5191 (E. 6.73 0.10 PSI ASTM D-5191 (A. ASTM D-519
LABORA	C – BASE CARBOB (GASOLINE) 05/26/99 12:02 C	
JOB NUMBER: WASSA	CLIENT I.D	TEST DESCRIPTION REID EQUIVALENT VAPOUR PRESSURE RVP CARE CALCULATION RVP EPA CALCULATION RVP ASTM CALCULATION PRESSURE TOTAL/GRABNER INSTRUMENT

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ABLE IV

		2/10
	990554-0039 05/20/99 18:01 1-500ml amber btl	ASTM D-5191 0528199 ASTM D-5191 (CARB) ASTM D-5191 (ASTM) ASTM D-5191 (ASTM) ASTM D-5191
S ATTN: Attn	LABORATORY 1.D DATE RECEIVED TIME RECEIVED	S OF MEASURE TEST METHOD ASTM D-5191 (C ASTM D-5191 (C ASTM D-5191 (A ASTM D-5191
LABORATORY TESTS RESULTS 05/28/99	НО	FINAL RESULT (JANTS-DILUTION CUNTS OF MEASURE 7.16* 0.10 PSI 7.29 0.10 PSI 8.12 0.10 PSI 8.12
LABC	BASE + 10% ETOH	FINAL RESULT 7.16* 7.41 7.28 8.12
JOB NUMBER: SRUSSA	CLIENT I.D	TEST DESCRIPTION REID EQUIVALENT VAPOUR PRESSURE RVP CARB CALCULATION RVP EPA CALCULATION RVP ASTM CALCULATION PRESSURE TOTALGRABNER INSTRUMENT
NBOC	CLIEN DATE ! TIME S WORK	REID EC RVP CA RVP EP, RVP AS, PRESSU

CABLE V

	r btl	05/28/99 05/28/99
Attn	LABORATORY LD 990554-0040 DATE RECEIVED 05/20/90 TIME RECEIVED 16:01 REMARKS	ASTM D-5191 ASTM D-5191 (CARB) ASTM D-5191 (EPA) ASTM D-5191 (STM) ASTM D-5191
SSULTS ATTN: Attn	LABORATORY (D DATE RECEIVED TIME RECEIVED	#1 ASTM D-5191 CMITS OF MEASURE TEST METHOD 17.04 0.10 PSI ASTM D-5191 (C. 6.91 0.10 PSI ASTM D-5191 (C. 6.91 0.10 PSI ASTM D-5191 (E. 7.73 0.10 PSI ASTM D-5191 (E. ASTM D-51
LABORATORY TESTS RESULTS 05/28/99	BASE + 10% ETOH + 1% 25% NEODOL 37.5% OPE 37.5% ATLAS	LIMITS/DILITION 11 0.10 0.10 0.10
LAB	BASE	6.79 7.04 6.91 7.73
JOB NUMBER: 986554	CLIENT I.D	TEST DESCRIPTION REID EQUIVALENT VAPOUR PRESSURE RVP CARB CALCULATION RVP ASTM CALCULATION RVP ASTM CALCULATION PRESSURE TOTAL/GRABNER INSTRUMENT

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	190	05/28/99
	: 990554-0042 : 05/20/99 : 16:01 : 1-500ml amber btl	TEST METHOD ASTM D-5191 (CARB) ASTM D-5191 (EPA) ASTM D-5191 (ASTM) ASTM D-5191
ATTN: Attn	ABORATORY I.D: 990554-0042 DATE RECEIVED 0520/99 TIME RECEIVED	FINEASURE TES AST AST AST AST AST AST
SULTS		PSI PSI PSI
LABORATORY TESTS RESULTS 05/28/99	BASE + 10% ETOH + 1% AAE + 75% NEODOL + 12.5% ODE + 12.5% ATLAS	6.56 0.10 PSI ASTM D-5191 (C. 1.0) (C. 1.0) (C. 1.0) PSI ASTM D-5191 (C
LABC		6.56 6.80 8.87 7.48
JOB NUMBER: SAGES	CLIENT LD	TEST DESCRIPTION REID EQUIVALENT VAPOUR PRESSURE RVP CARB CALCULATION RVP EPA CALCULATION RVP ASTM CALCULATION PRESSURE TOTAL/GRABNER INSTRUMENT

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TABLE VII

ATTN: Atm	LABORATORY 1.D 990554-0043 DATE RECEIVED 65/27/99 TIME RECEIVED 16:01 REMARKS 1-500ml amber bti	ASTM D-5191 ASTM D-5191 ASTM D-5191 (CARB) ASTM D-5191 (ASTM) ASTM D-5191 (ASTM) ASTM D-5191
LABORATORY TESTS RESULTS 05/28/99		MAL RESULT LIMITS OF MEASURE TEST METHOD 17.22 0.10 PS ASTM D-5191 17.34 17.34 0.10 PS ASTM D-5191 17.34
JOB NUMBER: 990554	CLIENT I.D	REID EGCRIPTION REID EQUIVALENT VAPOUR PRESSURE RVP CARB CALCULATION RVP EAR CALCULATION RVP SATM CALCULATION PRESSURE TOTAL/GRABNER INSTRUMENT

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TABLE VIII

	19.	05/28/99
Attn	ABORATORY I.D 990554-0044 AATE RECEIVED 05/27/99 IME RECEIVED: 16:01 REMARKS	ASTM D-5191 ASTM D-5191 (CARB) ASTM D-5191 (CARB) ASTM D-5191 (ASTM) ASTM D-5191
SULTS ATTN: Attn	LABORATORY I.D DATE RECEIVED TIME RECEIVED	# TRNAL RESULT CUMTS/PDILUTION CURTS OF MEASURE TEST METHOD # ASTM D-5191 6.76 0.10 PSI ASTM D-5191 (C. 1.0 PSI ASTM D-5191 (A. 1.0 PSI ASTM D-5191
LABORATORY TESTS RESULTS 05/28/99		LIMITS/PDILUTION 1-1 0.10 0.10 0.10 0.10
LABC	N (RECHECK) N (RECHECK)	FINAL RESULT 6.76 7.01 6.88 7.70
JOB NUMBER: 990554	CLIENT I.D	TEST DESCRIPTION REID EQUIVALENT VAPOUR PRESSURE RYP CARB CALCULATION RYP EPA CALCULATION RYP ASTM CALCULATION PRESSURE TOTAL/GRABNER INSTRUMENT
9	CEL WO	RVP RVP RVP PRE

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TABLE IX

ATTN: Aftr: 890554-0046 LABORATORY LD: 890554-0046 DATE RECEIVED: 65.27799 TIME RECEIVED: 16.01 REMARKS: 1-500ml amber bit	TEST METHOD DATE ASTM D-5191 ASTM D-6191 (CARB) ASTM D-6191 (ASTM) ASTM D-6191
ORY TESTS RESULTS	6.56 0.10 PSI ASTM D-5191 (B. 6.7 0.10 PSI ASTM D-5191 (C. 6.8 0.10 PSI ASTM D-5191 (E. 6.8 0.10 PSI AS
LABORA: CARBOB 90/10 REVERSE (RECHECK) 16:01 CARBOB 90/10 REVERSE (RECHECK)	6.56 6.80 6.87 7.48
LABORA1 JOB NUMBER: 99054 CLIENTID	IEST DESCRIPTION REID EQUIVALENT VAPOUR PRESSURE RVP CARB CALCULATION RVP EPA CALCULATION RVP ASTM CALCULATION PRESSURE TOTAL/GRABNER INSTRUMENT

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FABLE X

Fuel Summary CARB Gasoline vs CARB Gasoline + AAE10 @ 1000ppm

MPG	16.183 17.387 14.586 28.84 29.323 27.373	22.282	MPG	15.935 17.125 14.32 29.035 28.82 27.369	22.101	-0.81%
NMHC g/mlle	0.1196 0.1835 0.1108 0.3129 0.0638	0.157	NMHC g/mile	0.1479 0.1695 0.1662 0.2846 0.0659	0.166	5.70%
CH4 g/mile	0.027 0.03 0.021 0.031 0.008	0.022	CH4 g/mile	0.029 0.028 0.024 0.036 0.008	0.024	7.51%
CO2 g/mile	524.16 485.79 582.37 289.68 289.58 308.26	413.305	CO2 g/mile	532.46 493.70 592.59 287.52 294.62 308.29	418.199	1.18%
Nox g/mile	0.239 0.288 0.132 0.372 0.368	0.258	NOx g/mlle	0.245 0.287 0.115 0.41 0.129	0.263	1.92%
CO g/mile	1.697 2.744 1.427 3.269 0.772 1.878	1.964	CO g/mile	1.586 2.524 1.712 3.416 0.785 1.869	1.982	0.89%
THC g/mile	0.151 0.218 0.135 0.348 0.073	0.183	THC g/mile	0.18 0.202 0.194 0.326 0.074 0.182	0.193	5.66%
Fuel Tested EPA-75	CARB Base, Seq#1 CARB Base, Seq#1 CARB Base, Seq#1 CARB Base, Seq#1 CARB Base, Seq#1	Average	Fuel Tested EPA-75	CARB + AAE10, Seq#2 CARB + AAE10, Seq#2	Average	Deviation +/-
Vehicie	1993 Ford Explorer 1996 GMC Jimmy 1998 Dodge Ram 1991 Geo Prizm 1996 Nissan Sentra 1994 Nissan Sentra		Vehicie	1993 Ford Explorer 1996 GMC Jimmy 1998 Dodge Ram 1991 Geo Prizm 1996 Nissan Sentra 1994 Nissan Sentra		
Test No.	5736 5736 5675 5682 5736 5734		No.	3691 3684 3686 3700 1745		

I ABLE XI Fuel Summary EPA vs EPA + AAE10 @ 1000ppm

MPG	15.682 16.893 14.103 28.328 28.318 26.562	21.648	MPG	15.808 16.848 14.123 28.235 28.146 26.729	21.648	0.00%
NMHC g/mile	0.1743 0.1947 0.1965 0.2878 0.1514	0.205	NMHC g/mile	0.1804 0.2711 0.2521 0.3268 0.1697	0.245	19.45%
CH4 g/mile	0.043 0.046 0.046 0.035 0.012	0.034	CH4 g/mile	0.048 0.046 0.056 0.034 0.014	0.037	10.16%
CO2 g/mile	539.82 499.87 600.43 294.90 299.19 315.84	425.009	CO2 g/mlle	534.78 500.54 598.06 294.89 300.57 313.13	423.663	-0.32%
Nox g/mile	0.34 0.453 0.19 0.446 0.208 0.333	0.328	NOx g/mlle	0.351 0.517 0.227 0.519 0.187	0.362	10.27%
co g/mlle	2.316 2.882 2.466 3.392 1.038	2.508	CO g/mile	2.744 3.141 3.308 3.952 1.299 3.308	2.959	17.99%
THC g/mlle	0.223 0.242 0.249 0.327 0.165 0.253	0.243	THC g/mlle	0.234 0.324 0.315 0.365 0.185 0.30	0.287	18.00%
Fuel Tested EPA-75	EPA Base, Seq#3 EPA Base, Seq#3 EPA Base, Seq#3 EPA Base, Seq#3 EPA Base, Seq#3 EPA Base, Seq#3	Average	Fuei Tested EPA-75	EPA + AAE10, Seq#4	Average	Deviation +/-
Vehicle	1993 Ford Explorer 1998 GMC Jimmy 1998 Dodge Ram 1991 Geo Prizm 1996 Missan Sentra 1994 Missan Sentra		Vehicle	1993 Ford Explorer 1996 GMC Jimmy 1998 Dodge Ram 1991 Geo Prizm 1996 Nissan Sentra 1994 Nissan Sentra		
Test No.	5706 5693 5692 5708 5752 5753		Test No.	5709 5701 5702 5717 5758 5759		

ABLE XII

Fuel Summary Gasohol vs Gasohol + AAEnn @ 48ms

	Q	2	16.336	17.083	14.367	29.549	27.056	23 463	27. IB	MPG	•		16.472	17.351	79.86g	28.814	26.842		22.282	0.45%
	NMHC		0.1275	0.1765	0.1655	0.2309	0.1694	0.162	!	NMHC	g/mlle	,	0.1312	0.1556	0.2436	0.0848	0.1492	97.0	. 163	0.16%
	5¥2	g/mile	0.033	0.037	0.047	0.012	0.022	0.032		C.	g/mlle	9000	0.03	0.04	0.035	0.0	0.019	0.00	0.029	-7.22%
	C05	g/mile	519.43	495.15	283.54	295.48	311.28	415.807		C05	g/mile	515.20	488.00	590.74	280.95	294.61	314.49	413.998		0.44%
	Nox	g/mile	0.251	0.342	0.452	0.175	0.388	0.30		NOX of mile	D D	0.28	0.30	0.156	0.443	0.135		0.279		-7.24%
4600ррш	00	2	2.359	2.102	3.804	0.907	107-7	1.992	8	g/m/g		1.48	1.972	2.04	0.793	1.846		1.768	.44 250/	0/07:11
+ AAE00 @	THC g/mile		0.219	0.219	0.273	0.138		0.198	Ę	g/mlle		0.17	0.237	0.283	0.096	0.17		0.196	-1.25%	!
ASSOCIATION OF CASONOI + AAEOO @ 4600ppm	Fuel Tested EPA-75	Gasohol Race Condition	Gasohol Base, Seq#5	Gasobol Base, Seq#5	Gasohol Base Seoths	Gasohol Base, Seq#5		Average	Fuel	Tested EPA-75	Gasohol + AAEnn Caran	Gasohol + AAFOO Soute	Gasohol + AAE00 Sen#8	Gasohol + AAE00, Seq#6	Gasohol + AAE00, Seq#6	Gasonol + AAE00, Seq#6	Average	P. S.	Deviation +/-	
	Vehicle	1993 Ford Explorer	1996 GMC Jimmy 1998 Dodge Pam	1991 Geo Prizm	1996 Nissan Sentra	1994 Nissan Sentra			Vehicle		1993 Ford Explorer		_	1991 Geo Prizm	1994 Nissan Sentra	Brillian imposition				
	Test No.	5722	5710 5710	5727	5764	90/0			Test	į	5726	2770	27.18	57.70	5769					

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